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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/607,733	06/26/2003	Joshua Oen	884.869US1	6513
21186	7590	12/14/2006	EXAMINER	
SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.			CHEVALIER, ALICIA ANN	
P.O. BOX 2938				
MINNEAPOLIS, MN 55402			ART UNIT	PAPER NUMBER
			1772	

DATE MAILED: 12/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/607,733

Applicant(s)

OEN, JOSHUA

Examiner

Alicia Chevalier

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12, 14-26 and 28-30 is/are pending in the application.
- 4a) Of the above claim(s) 23-26 and 28-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 14-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

RESPONSE TO AMENDMENT

Request for Continued Examination

1. The Request for Continued Examination (RCE) under 37 CFR 1.53 (d) filed on October 5, 2006 is acceptable and a RCE has been established. An action on the RCE follows.
2. Claims 1-12, 14-26 and 28-30 are pending in the application, claims 23-26 and 28-30 are withdrawn from consideration. Claims 13 and 17 have been cancelled.
3. Amendments to the claims, filed on September 15, 2006, have been entered in the above-identified application.

WITHDRAWN REJECTIONS

4. The 35 U.S.C. §112 rejections of claims 1-12 and 14-22, made of record in the office action mailed July 17, 2006, pages 2-3, paragraphs #5-7 have been withdrawn due to Applicant's amendment in the response filed September 15, 2006.
5. The 35 U.S.C. §102 rejection of claims 1, 11 and 14 over Petersen (US Patent No. 3,736,769), made of record in the office action mailed July 17, 2006, pages 2-3, paragraphs #5-7 have been withdrawn due to Applicant's amendment in the response filed September 15, 2006.

REJECTIONS

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 112

7. Claims 14-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term “circuit package” in claim 14 is unclear and renders the claims vague and indefinite. It is unclear what structure is meant by “package.” For purposes of examination a “circuit package” is considered to be any circuit.

Claim Rejections - 35 USC § 102

8. Claims 1-4, 7-10, 14, 15 and 17-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Frescura et al. (U.S. Patent No. 3,590,328).

Regarding Applicant’s claims 1 and 14, Frescura discloses an apparatus comprising a heat source comprising a circuit (*col. 2, line 24*), a heat sink (*col. 2, lines 16-17*) and a unitary layer of electrically non-conductive material (*col. 3, line 10*) having a first surface adjacent the heat sink, a second surface adjacent the heat source (*figures 2 and 3*), and a plurality of unfilled openings communicatively (*col. 3, lines 3-5*) coupled between the first surface and the second surface (*figures 2 and 3*). A combined area of the plurality of unfilled opening comprises a selected percentage of the first surface (*figures 2 and 3*).

Regarding the limitation “circuit package”, the Examiner has given the term the broadest reasonable interpretation consistent with the written description in applicant’s specification, as it would be interpreted by one of ordinary skill in the art. *In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997); *In re Donaldson Co., Inc.*, 16 F.3d 1190, 1192-95, 29

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USPQ2d 1845, 1848-50 (Fed. Cir. 1994). The term “circuit package” is considered to read on a “circuit”.

Regarding Applicant’s claims 2-4, Frescura discloses that selected ones of the plurality of unfilled openings comprise a regular geometric shape. The regular geometry shape is substantially circular or square (*figures 2 and 3*).

Regarding Applicant’s claims 7, 8, 21 and 22, Frescura discloses that the combined area of the plurality of unfilled openings comprises no more than about 90% or 95% of the first surface (*figures 2 and 3*). The combined area of the plurality of unfilled openings is deemed to comprises a selected percentage of the first surface and the second surface and wherein the selected percentage of the second surface is deemed to be different from the selected of the first surface (*figures 2 and 3*).

Regarding Applicant’s claims 9, 10, 15 and 17, Frescura discloses that the unitary layer of electrically non-conductive material comprises a polymer (*col. 4, lines 21-25*) and that the thermal interface material is located between the unitary layer of electrically non-conductive material and the heat sink (*col. 3, line 21*).

Regarding Applicant’s claims 18-20, Frescura is deemed to disclose that the heat source comprises a transponder, a die and a heat spreader, since the reference discloses that the heat source is a circuit (*col. 2, line 24*).

Claim Rejections - 35 USC § 103

9. Claims 5, 6 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frescura (U.S. Patent No. 3,590,328).

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Frescura is relied upon as described above.

Frescura fails to disclose that selected ones of the plurality of unfilled openings irregular geometric shape or that the combined area of plurality of unfilled openings comprises at least about 90% of the first surface or the thickness of the unitary layer of electrically non-conductive material.

It would have been an obvious matter of design choice to change the shape of shapes of the unfilled openings, since a modification would have involved a mere change in size of the openings. A change in size or shape is generally recognized as being within the level of ordinary skill in the art, absent unexpected results. MPEP 2144.04 (I) and (IV).

One of ordinary skill in the art would have been motivated to change the shape of the openings in order to improve heat dissipation.

Also, the exact amount of open area and thickness of the material is deemed to be a result effective variable with regard to the heat transfer. It would require routine experimentation to determine the optimum value of a result effective variable, such as thickness and percent open space, in the absence of a showing of criticality in the claimed thickness and percentage. *In re Boesch*, 205 USPQ 215 (CCPA 1980), *In re Woodruff*, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

10. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frescura (U.S. Patent No. 3,590,328).

Frescura is relied upon as described above.

Frescura fails to disclose that the unitary layer of electrically non-conductive material comprises a non-woven material or a plurality of glass beads.

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However, Applicant's specification shows that a polymer layer, a non-woven material layer and a plurality of glass beads layer are equivalent structures known in the art. Therefore, because these three materials are art-recognized equivalents at the time of the invention, one of ordinary skill in the art would have found it obvious to substitute one for another.

Also, it would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute one material for the other, since it would have been within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use, unless a non-woven material or a plurality of glass beads gives unexpected results.

In re Leshin, 125 USPQ 416.

ANSWERS TO APPLICANT'S ARGUMENTS

11. Applicant's arguments in the response filed September 15, 2006 regarding the previous rejections of record have been considered but are moot since the rejections have been withdrawn.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alicia Chevalier whose telephone number is (571) 272-1490. The examiner can normally be reached on Monday through Friday from 8:00 am to 4:00 pm.

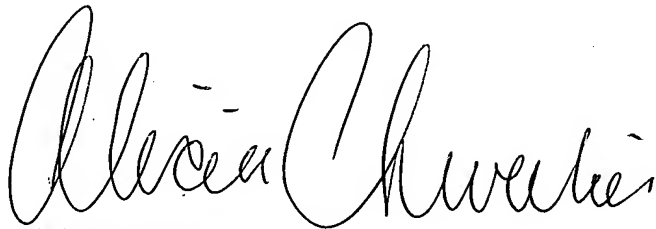
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached on (571) 272-1498. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ac

12/11/06



**ALICIA CHEVALIER
PRIMARY EXAMINER**